## REMARKS

By the above amendments, claims 17-19 are pending in the subject application: claims 17-19 stand rejected. Favorable reconsideration of the application and allowance of all of the pending claims are respectfully requested in view of the above amendments and the following remarks.

Claim 19 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The phrase cited by the Examiner has been removed from claim 19. Accordingly, the Examiner is respectfully requested to reconsider and withdraw this rejection.

Claims 17-19 are rejected under 35 U.S.C. § 102(b) and § 103(a) as being unpatentable over Fernsler et al. (hereinafter Fernsler) and Meger et al. (hereinafter Meger).

The Examiner cites Fernsler and Meger for disclosing an apparatus comprising a processing chamber, an electron source operable to provide an electron beam in said processing chamber, and an electron beam confiner operable to generate a magnetic field at 200 G.

In addition, the Examiner asserts that Fernsler teaches the use of an electron beam current density of .05 $A/cm^2$ , which is within "approximately .01 $A/cm^2$, and it would have been prima facie obvious to use the current density suggested by Fernsler in the apparatus of Meger, because Fernsler teaches that this is a useful and successful value of current density for processing." Applicants respectfully disagree.

Amended claim 17 recites, *inter alia*, an ion-ion plasma source, comprising a processing chamber comprising halogen based gas. an electron source operable to provide an electron beam in said processing chamber, the electron beam having a current density of approximately .1 $A/cm^2$ , and an electron beam confiner operable to apply a magnetic field at the electron beam to generate a confined electron beam in said processing chamber, to ionize the halogen based gas to generate an ion-ion plasma that substantially comprises negative ions.

Both Fernsler and Meger specifically disclose current density values; Fernsler discloses .010-.050 A/cm$^2$ and Meger discloses .002-.005 A/cm$^2$ . Neither of these values are within the recited limitation of approximately .1 A/cm$^2$ , in fact, the recited current density limitation of amended claim 17 and amended claim 19 is orders of magnitude larger than the current densities employed by the device of Fernsler and Meger. Accordingly, neither Fernsler nor Meger anticipates the value of the electron beam current density of approximately .1 A/cm$^2$.

It is not evident from either Fernsler or Meger that the systems disclosed respectively therein are operable at any other current densities. On the contrary, both Fernsler and Meger specifically state the operable current densities of their respective devices. Neither Fernsler nor Meger disclose or suggest other approximate current densities, nor has the Examiner cited other art that would suggest substituting the current densities. Accordingly, the only evidence of record, i.e., Fernsler and Meger, suggest it would not be obvious to use the current density of Fernsler within the apparatus of Meger, as Meger states those current density values that would be operable within the Meger device.

Since claim 18 depends from independent claim 17, for the reasons discussed above, claim 18 would also be allowable.

Amended claim 19 recites, *inter alia*, an ion-ion plasma source, comprising, a processing chamber comprising halogen based gas, an electron source operable to provide an electron beam in said processing chamber, the electron beam having a current density of approximately .1 A/cm$^2$, and an electron beam confiner operable to apply a magnetic field at approximately 200 G, to generate a confined electron beam in said processing chamber, to ionize the halogen based gas to generate an ion-ion plasma that substantially comprises negative ions.

Amended claim 19 includes the recited limitation of approximately .1 A/cm$^2$ similar to the limitation of amended claim 17. Accordingly, claim 19 is allowable based on the discussion above.

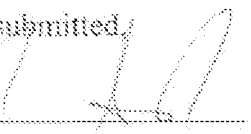
Further, the Examiner notes on page 3 of the office action that claim 17 includes a recitation of the intended use of the recited "electron beam confiner." As recited in the MPEP § 2173.05(g), "[t]here is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper." The apparatus claim 17 recites "an electron beam confiner operable to apply a magnetic field at the electron beam to generate a confined electron beam in said processing chamber, to ionize the halogen based gas to generate an ion-ion plasma that substantially comprises negative ions." Thus the functional language is further defining a stated element. Accordingly, MPEP 2173.05(g) allows for amended claim 17, as well as amended claim 19, to recite the intended use of the electron beam confiner.

In view of the foregoing, Applicants respectfully request the Examiner to find the application to be in condition for allowance with claims 17-19. However, if for any reason the Examiner feels that the application is not now in condition for allowance, he is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Filed concurrently herewith is a Petition with payment for an extension of time of three months. Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any fee required for such extension to be charged to Deposit Account No. 500281.

Dated: 10/26/2006

Respectfully submitted,

By 

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